



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,629	12/30/2003	Elizabeth L. Walker	ESCI-106US	7514

23122 7590 03/16/2007  
RATNERPRESTIA  
P O BOX 980  
VALLEY FORGE, PA 19482-0980

EXAMINER
----------

ZHENG, LOIS L

ART UNIT	PAPER NUMBER
----------	--------------

1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/748,629	Applicant(s) WALKER ET AL.	
	Examiner Lois Zheng	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.  
 4a) Of the above claim(s) 8-10 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-7 and 11-14 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Status of Claims***

1. Claims 1 and 4-7 are amended in view of applicant's amendment filed 8 January 2007. New claims 11-14 are added in view of the amendment. Claims 8-10 remain withdrawn from consideration. Therefore, claims 1-7 and 11-14 are currently under examination.

### ***Status of Previous Rejection***

2. The rejection of claim 5 under 35 U.S.C. 112, second paragraph, is withdrawn in view of the claim amendments filed 8 January 2007.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 5-6 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by, or in the alternative, being unpatentable over Lapluye et al. US 5,156,892(Lapluye).

Lapluye teaches applying a corrosion inhibiting solution to metal surfaces to form a protective coating(col. 1 lines 6-9 and col. 1 line 64 – col. 2 line 6). To test the effectiveness of the protective coating, Lapluye further teaches exposing treated and untreated metal surfaces to an atmosphere containing hydrogen sulfide and observe for metal surface color change(col. 3 lines 15-17). According to Lapluye, the untreated copper plate changes color entirely after 1 minute and the treated copper plate starts to change color after 132 minutes(col. 3 lines 21-23) Lapluye further teaches that the metal surfaces are first scoured by a treatment with chromic acid and rinsed with tap water and distilled water prior to the surface treatment(col. 2 lines 54-57).

Regarding instant claims 1-3, 5-6 and 11, the preamble “for determining the absence of a residual amount of corrosion inhibitor on a copper surface” is merely stating the intended use for the claimed process, therefore, does not render the instant invention patentable.

Even though Lapluye does not explicitly teach that the untreated copper plate is cleaned and rinsed prior to being exposed to hydrogen sulfide, the examiner finds that the cleaning and the rinsing of the untreated copper plate to be inherently taking place in the testing process of Lapluye in order for the testing of treated and untreated copper surfaces to be carried out on equal footing and with more validity and accuracy. Or alternatively, one of ordinary skill in the art would have found it obvious to have also cleaned and rinsed the untreated copper surface prior to exposing it to hydrogen sulfide test in order for the testing of treated and untreated copper surfaces to be carried out on equal footing and with more validity and accuracy.

Therefore, the scouring of metal surface prior to surface treatment as taught by Lapluye reads on the claimed step of subjecting copper surface to a cleaning solution containing a corrosion inhibitor. The testing step of exposing untreated copper surface to hydrogen sulfide containing atmosphere as taught by Lapluye reads on the claimed step of exposing the copper surface to a reactant that reacts with the copper surface to cause a visible color change. Lapluye teaches the claimed gaseous reactant is hydrogen sulfide and the copper plate as taught by Lapluye reads on the claimed copper surface or copper coupon or test piece. Lapluye also teaches the claimed color change after exposure to hydrogen sulfide gas, which is a sign of sulfur attacking of copper surface due to lack of corrosion inhibitor on the copper surface.

Regarding claims 12-14, the instant claims are mostly rejected for the same reasons as stated in the rejection of claims 1-3, 5-6 and 11 above. In addition, the untreated copper plate being exposed to hydrogen sulfide gas as taught by Lapluye reads on the claimed sacrificial copper couple or test piece as recited in claims 12 and 14. Furthermore, even though Lapluye does not explicitly teach the cleaning of a group or a batch of copper coupons or test pieces, one of ordinary skill in the art would have found it obvious to have cleaning and rinsed all copper pieces used in the test (i.e. see example 7) of Lapluye together in a group or a batch prior to subjecting some of them to surface treatment and hydrogen sulfide gas exposure in order to save time and cost associated with cleaning metal pieces individually. Furthermore, Lapluye teaches subjecting an untreated copper plate to exposure of hydrogen sulfide, the examiner

Art Unit: 1742

concludes that the claimed removing the sacrificial copper coupon or test piece from the group or batch of copper pieces to be also taking place in the process of Lapluye.

6. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lapluye in view of Tadashi et al. JP 59-083913(Tadashi).

The teachings of Lapluye are discussed in paragraph 5 above. However, Lapluye does not teach how the hydrogen sulfide gas is formed.

Tadashi teaches a tool for generating hydrogen sulfide(title). Tadashi further teaches that its hydrogen sulfide generator reacts acetic acid with sodium sulfide to produce hydrogen sulfide(abstract). In addition, Tadashi does not appear to have a temperature requirement for the reaction between acetic acid and sodium sulfide to occur.

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the hydrogen sulfide generator of Tadashi into the process of Lapluye in order to provide sufficient hydrogen sulfide gas to the process of Lapluye to achieve proper corrosion inhibitor testing.

Regarding claims 4 and 7, Lapluye in view of Tadashi teach the claimed reaction of acetic acid and sodium sulfide to form hydrogen sulfide gas. In addition, since Tadashi does not have specific temperature requirement for the reaction between acetic acid and sodium sulfide, the examiner concludes, based on the broadest reasonable interpretation, that the reaction of acetic acid and sodium sulfide as taught by Lapluye in view of Tadashi may occur at room temperature as claimed. Furthermore, even though Lapluye in view of Tadashi do not explicitly teach the claimed sodium sulfide in

Art Unit: 1742

deionized water, one of ordinary skill in the art would have found the claimed sodium sulfide in deionized water obvious since it is deionized water is a popular solvent used in chemical reactions due to high quality of the water and the absence of impurities.

### ***Response to Arguments***

7. Applicant's arguments filed 8 January 2007 have been fully considered but they are not persuasive.

In the remarks, applicant argues that each independent claim defines a method wherein the reactant only reacts with those copper surfaces absent of residual corrosion inhibitor left over from the cleaning solution.

The examiner does not consider applicant's argument persuasive since Lapluye teaches the claimed steps of exposing a copper surface that is previously subjected to cleaning and rinsing, and exposing the cleaned copper surface to hydrogen sulfide gas so that the hydrogen sulfide gas react with the cleaned copper surface, which is not treated with the corrosion inhibiting composition of as taught by Lapluye(i.e. the untreated copper plate), to cause a visible color change. The process of Lapluye carried out on a cleaned, but untreated copper plate surface meets the limitations of the instant invention. The fact that the treated copper plate as taught by Lapluye does change color after 132 minutes after being exposed to hydrogen sulfide is not relevant since it is not commensurate with the scope of the instant invention(i.e. instant claims do not include color change limitations for copper surfaces that are additionally treated with a corrosion inhibiting solution).

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LLZ

ROY KONG  
SUPERVISORY PATENT EXAMINER  
TECH. STATION 6